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(54) Title: ANTI-INFLAMMATORY TREATMENT BASED ON STRONTIUM COMPOUNDS

(57) Abstract: The invention provides a method of treatment of a human or non-human animal subject to combat inflammation arising from a condition associated with pain or a condition not associated with pain, said method comprising administering to said subject an effective amount of a physiologically tolerable strontium compound.

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INTERNATIONAL SEARCH REPORT

Int lional Application No

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A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 A61K33/24 A61K31/28 A61P29/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P, X	WO 03/028742 A (COCKBAIN JULIAN ; FAGERLUND BJOERN JARL (NO); JELLUM EGIL (NO); SANTOS) 10 April 2003 (2003-04-10) cited in the application page 2, lines 35-37; claims 1,2,5,6,8,10 page 4, lines 5-13; example 4 page 8, lines 3-14; example 19	1,2,6, 8-11,17
X	US 5 851 556 A (BRETON LIONEL ET AL) 22 December 1998 (1998-12-22) column 6, line 21 - column 7, line 18; claims 26-28,32-40; example 22 column 1, line 43 - column 2, line 7; examples 6-13,21,23,24 ----- -/--	1-7,10, 11,14,15



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
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- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

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- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *Z* document member of the same patent family

Date of the actual completion of the international search

26 October 2004

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04/11/2004

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INTERNATIONAL SEARCH REPORT

Int lonal Application No
PCT/GB2004/001369

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 96/19184 A (HAHN GARY SCOTT ; COSMEDERM TECHNOLOGIES (US); THUESON DAVID OREL (US)) 27 June 1996 (1996-06-27) page 8, lines 10-27; claims 1,38,40,41,50,53-58,61 page 16, line 1 - page 17, line 9 page 26, lines 1-19 page 30, lines 3-7 page 5, line 20 - page 6, line 1	1-7,10, 11,14,15
X	HAHN G S: "Strontium is a potent and selective inhibitor of sensory irritation" DERMATOLOGIC SURGERY, ELSEVIER SCIENCE, NEW YORK, NY, US, vol. 25, no. 9, September 1999 (1999-09), pages 689-694, XP002225553 ISSN: 1076-0512 page 693, left-hand column, paragraph 2	1-7,10, 17
X	WO 97/48371 A (HAHN GARY SCOTT ; QUICK TIMOTHY W (US); COSMEDERM TECHNOLOGIES (US); T) 24 December 1997 (1997-12-24) page 25, line 8 - page 26, line 6 page 30, line 6 - page 31, line 5 page 37	1-8,10, 14
X	US 5 866 168 A (BRETON LIONEL ET AL) 2 February 1999 (1999-02-02) column 3, lines 59-61; claims 1-7; example 4	1-7,10, 14
A	US 5 258 557 A (VARGAS-GARZA HECTOR) 2 November 1993 (1993-11-02) column 1, line 47 - column 2, line 6; claim 9	2,5,11, 12
A	US 6 168 777 B1 (GREFF RICHARD J ET AL) 2 January 2001 (2001-01-02) claims 1,3,6	9

INTERNATIONAL SEARCH REPORT

national application No.
PCT/GB2004/001369

Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

Although claims 1-5 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT/GB2004/001369

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 03028742	A	10-04-2003	EP 1429792 A1 WO 03028742 A1	23-06-2004 10-04-2003
US 5851556	A	22-12-1998	FR 2732599 A1 FR 2732600 A1 FR 2732601 A1 FR 2732602 A1 CA 2173689 A1 EP 0737471 A2 NO 961371 A FR 2732603 A1	11-10-1996 11-10-1996 11-10-1996 11-10-1996 11-10-1996 16-10-1996 11-10-1996 11-10-1996
WO 9619184	A	27-06-1996	US 5716625 A AT 222744 T AU 717182 B2 AU 4689796 A BR 9510529 A CA 2208246 A1 CN 1175206 A CZ 9701914 A3 DE 69527987 D1 DE 69527987 T2 DK 806933 T3 EP 1136065 A1 EP 0806933 A1 ES 2181812 T3 FI 972580 A HK 1004663 A1 HU 77099 A2 JP 11502505 T NO 972922 A NZ 301463 A PL 320935 A1 PT 806933 T WO 9619184 A1 US 2003124202 A1 US 5804203 A US 6139850 A US 2003031727 A1	10-02-1998 15-09-2002 16-03-2000 10-07-1996 15-12-1998 27-06-1996 04-03-1998 12-11-1997 02-10-2002 28-05-2003 06-01-2003 26-09-2001 19-11-1997 01-03-2003 19-08-1997 21-03-2003 02-03-1998 02-03-1999 21-08-1997 27-04-2001 10-11-1997 31-01-2003 27-06-1996 03-07-2003 08-09-1998 31-10-2000 13-02-2003
WO 9748371	A	24-12-1997	US 5804203 A AU 3406997 A CA 2258726 A1 EP 0954274 A1 WO 9748371 A1 US 2003031727 A1	08-09-1998 07-01-1998 24-12-1997 10-11-1999 24-12-1997 13-02-2003
US 5866168	A	02-02-1999	FR 2740341 A1 AT 198276 T CA 2188688 A1 DE 69611343 D1 DE 69611343 T2 EP 0775492 A1 ES 2155179 T3 JP 9169657 A NO 964515 A	30-04-1997 15-01-2001 27-04-1997 01-02-2001 26-04-2001 28-05-1997 01-05-2001 30-06-1997 28-04-1997
US 5258557	A	02-11-1993	NONE	

INTERNATIONAL SEARCH REPORT

Information on patent family members

Int. onal Application No
PCT/GB2004/001369

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 6168777	B1	02-01-2001	US 6015541 A 18-01-2000
		AU 1270599 A 24-05-1999	
		AU 1378499 A 24-05-1999	
		CA 2307190 A1 14-05-1999	
		CA 2307191 A1 14-05-1999	
		EP 1028757 A1 23-08-2000	
		EP 1028758 A1 23-08-2000	
		JP 2001521911 T 13-11-2001	
		JP 2001521912 T 13-11-2001	
		WO 9922774 A1 14-05-1999	
		WO 9922775 A1 14-05-1999	
		US 6214315 B1 10-04-2001	
		US 2001009656 A1 26-07-2001	